

AMENDMENTS TO THE CLAIMS

1-5. (Canceled)

6. (Currently Amended) ~~The A fluid delivery system of claim 5 for a multiple chemistry electrochemical plating platform, comprising:~~

a solution mixing system fluidly communicating with a fluid distribution manifold, wherein the solution mixing system comprises:

a fluid metering pump having a plurality of fluid inputs and at least one fluid output in fluid communication with the manifold;

a base solution container in fluid communication with one of the plurality of inputs;

a plurality of additive containers, each of the plurality of additive containers being in fluid communication with at least one of the inputs; and

a controller in communication with the fluid metering pump, the controller being configured to operate the metering pump such that the base solution and fluid from the plurality of additive containers is mixed in a predetermined ratio and dispensed from one of the at least one outputs;

a catholyte supply conduit in fluid communication with the manifold and selectively in fluid communication with a plurality of catholyte fluid solution tanks;

an anolyte supply conduit in fluid communication with the manifold and selectively in fluid communication with a plurality of anolyte fluid solution tanks, wherein the plurality of catholyte tanks and the plurality of anolyte tanks are grouped into pairs, wherein each pair comprises one catholyte tank and one anolyte tank, wherein each of the pairs is in fluid communication with an individual plating cell, wherein each of the anolyte and catholyte tanks comprise a fluid baffle system positioned in an interior of the tanks, and wherein the baffle system comprises:

at least two compartments, the at least two compartments being separated by at least one wall;

a fluid feed through positioned in a lower portion of the wall; and

at least one angled wall positioned in a fluid flow path within each of the at least two compartments; and

a selectively actuated valve positioned adjacent each of the anolyte and catholyte tanks in the supply conduits.

7-12. (Canceled)

13. (Currently Amended) The A plating solution mixing and delivery system for an electrochemical plating platform, comprising:

a fluid mixing apparatus, comprising:

a fluid metering pump having a plurality of inputs and at least one output;

a base solution container in fluid communication with one of the plurality of inputs;

a plurality of additive containers, each of the plurality of additive containers being in fluid communication with at least one of the inputs; and

a controller in communication with the fluid metering pump, the controller being configured to operate the metering pump such that the base solution and fluid from the plurality of additive containers is mixed in predetermined ratios and dispensed from one of the at least one outputs;

a fluid dispensing manifold in fluid communication with the at least one output;

an anolyte conduit in fluid communication with the manifold, the anolyte conduit fluidly communicating with an anolyte storage tank;

a catholyte conduit in fluid communication with the manifold, the catholyte conduit fluidly communicating with a catholyte storage tank, wherein the catholyte storage tank comprises a six sided fluid containing tank having at least one slanted fluid receiving side, wherein the catholyte storage tank comprises a fluid return line positioned to dispense circulated catholyte onto an interior surface of the slanted fluid receiving side, wherein the catholyte tank comprises a baffle system positioned in an interior of the tank of claim 42, wherein the baffle system comprises:

a plurality of baffle walls that cooperatively form a plurality of fluidly isolated compartments; and

a plurality of fluid pass throughs positioned on a lower portion of the plurality of baffle walls, the plurality of fluid pass throughs operating to allow fluid to travel from one isolated compartment to an adjacent isolated compartment; and

an electrochemical plating cell having an anolyte compartment and a catholyte compartment, the anolyte compartment being in fluid communication with the anolyte storage tank and the catholyte compartment being in fluid communication with the catholyte storage tank.

14. (Original) The system of claim 13, wherein each of the isolated compartments includes an angled fluid engaging wall positioned in a fluid path therein.

15. (Currently Amended) The A plating solution mixing and delivery system for an electrochemical plating platform, comprising:

a fluid mixing apparatus, comprising:

a fluid metering pump having a plurality of inputs and at least one output;

a base solution container in fluid communication with one of the plurality of inputs;

a plurality of additive containers, each of the plurality of additive containers being in fluid communication with at least one of the inputs; and

a controller in communication with the fluid metering pump, the controller being configured to operate the metering pump such that the base solution and fluid from the plurality of additive containers is mixed in predetermined ratios and dispensed from one of the at least one outputs;

a fluid dispensing manifold in fluid communication with the at least one output;

an anolyte conduit in fluid communication with the manifold, the anolyte conduit fluidly communicating with an anolyte storage tank system of claim 9, wherein the anolyte tank comprises a plurality of isolated fluid chambers separated by baffle walls having fluid pass throughs positioned on a lower portion thereof;

a catholyte conduit in fluid communication with the manifold, the catholyte conduit fluidly communicating with a catholyte storage tank; and

an electrochemical plating cell having an anolyte compartment and a catholyte compartment, the anolyte compartment being in fluid communication with the anolyte storage tank and the catholyte compartment being in fluid communication with the catholyte storage tank.

16. (Original) The system of claim 15, comprising a fluid purge valve positioned adjacent each of the anolyte and catholyte tanks in the respective anolyte and catholyte conduits.

17. (Original) The system of claim 15, wherein the fluid purge valve is in communication with the controller and is configured to drain the catholyte conduit and the anolyte conduit once a desired chemistry is delivered to the respective anolyte or catholyte tank.

18. (Previously Presented) A plating solution mixing and delivery system for a multi-chemistry electrochemical plating system, comprising:

a plating solution mixing assembly positioned onboard the multi-chemistry electrochemical plating system;

at least one catholyte solution tank and at least one anolyte solution tank, each of the anolyte solution tank and the catholyte solution tank being in fluid communication with the plating solution mixing assembly;

a fluid bubble baffle assembly positioned inside the catholyte solution tank, wherein the fluid bubble baffle assembly comprises:

a plurality of upstanding walls that cooperatively form isolated fluid chambers therebetween, the plurality of upstanding walls having a plurality of fluid pass throughs positioned at a lower base of the upstanding walls, the positioning of the fluid pass throughs being configured to generate a serial fluid path through all of the isolated fluid chambers; and

a plurality of angled baffle walls positioned in a fluid path of each of the isolated chambers; and

a supply line purge valve positioned adjacent each of the catholyte solution tank and the anolyte solution tank in fluid communication with fluid supply return line for the respective tanks, the supply line purge valve being configured to drain fluid from the supply return line after a fluid solution has been delivered to the tank.

19. (Canceled)

20. (Previously Presented) The system of claim 18, wherein the catholyte solution tank includes a tilted wall configured to receive recirculated catholyte solution thereon and flow the catholyte solution downward towards the bottom of the catholyte solution tank while maintaining the flowing catholyte solution on a tilted surface of the wall.

21. (Original) The system of claim 18, wherein the plating solution mixing assembly comprises:

a fluid metering pump having a plurality inputs and at least one output;

a virgin plating solution source in fluid communication with one of the plurality of inputs;

a plurality of additive sources in fluid communication with individual inputs of the fluid metering pump; and

a metering pump controller configured to operate the metering pump such that the virgin plating solution is mixed with the additive sources in a predetermined ratio and dispensed from the output of the metering pump to the catholyte tank or the anolyte tank.